

I claim:

1. Suction tubing for removing air from a collapsible structure, the tubing  
2 comprising:
  - a. a length of hollow plastic tubing having interior and exterior surfaces, the  
4 interior surface defining a flow path for a fluid;
  - b. the exterior surface having a selected number of ridges defining valleys  
6 there between, the ridges extending a for a selected length of the tubing; and  
wherein the valleys between the ridges contain a plurality of perforations extending a  
8 selected length of the tubing, the plurality of perforations for providing a plurality of  
additional flow paths to the interior of the tubing.
2. The suction tubing of claim 1 wherein the collapsible structure is plastic,  
2 having known characteristics of flexibility and curvature, wherein each of the selected  
ridges has an apex and wherein the distance between adjacent ridges is selected such that  
4 when suction is applied to the structure the radius of curvature of the plastic is greater  
than the distance between adjacent ridges.
3. The suction tubing of claim 1 wherein the collapsible structure is plastic,  
2 having a known characteristics of flexibility and curvature, wherein the each of the  
selected ridges has an apex, and wherein the distance from the surface of the valleys to  
4 the apex of the ridges is selected such that when suction is applied to the structure the  
radius of curvature of the plastic is greater than the distance from the surface of the valley  
6 to the apex.
4. The suction tubing of claim 1 wherein the tubing is comprised of first and  
2 second extrusions of plastic, the first extrusion having a cross-section shape in the form  
of a U with first and second horizontal parallel arms and a flat bottom surface, the second  
4 extrusion having a cross-section shape of an inverted U, with two horizontal parallel

gripping arms and a curved upper surface, and wherein when the first extrusion is spirally wound, the second parallel arm of one spiral abuts the adjacent first parallel arm of the next spiral, so that when the second extrusion is complementarily mated with the spirally wound first extrusion, the gripping arms of the second extrusion bind the adjacent abutting arms of the first extrusion so as to form a cylinder and the curved upper surface of the second extrusion forms the apex of the ridge.

5. The suction tubing of claim 4 wherein the first extrusion is selectedly perforated prior to the mating of the second extrusion to the spirally wound first extrusion.

6. The suction tubing of claim 5 wherein the perforations are placed at selected distances along the first extrusion.

7. The suction tubing of claim 6 wherein the distance between perforations is selected so that, when the first extrusion is spirally wound to form a cylinder, the perforations are placed circumferentially equidistant about each successive spiral.

8. The suction tubing of claim 1 wherein whereby the suction tubing is formed by a blow molding process, wherein a molten tube of thermoplastic material is blown up using compressed air to cause said material to conform to the interior of a chilled blow mold, the chilled blow mold formed to conform to the shape of the suction tubing, the blow mold having pins to produce perforations in the tubing, and wherein when the tubing is produced by the process, the tubing has said ridges, valleys, and perforations.

9. The suction tubing of claim 8 wherein the collapsible structure is plastic, having known characteristics of flexibility and curvature, wherein each of the selected ridges has an apex and wherein the distance between adjacent ridges is selected such that when suction is applied to the structure the radius of curvature of the plastic is greater

than the distance between adjacent ridges.

10. The suction tubing of claim 8 wherein the collapsible structure is plastic,  
2 having a known characteristics of flexibility and curvature, wherein the each of the  
selected ridges has an apex, and wherein the distance from the surface of the valleys to  
4 the apex of the ridges is selected such that when suction is applied to the structure, the  
radius of curvature of the plastic is greater than the distance from the surface of the valley  
6 to the apex.

11. The suction tubing of claim 8 wherein the tubing is cylindrical and the  
2 perforations are placed equidistant about the circumference of the tubing.

12. The suction tubing of claim 8 wherein the tubing has a rectangular cross-  
2 section, the tubing having two pair of opposing parallel sides, and where the perforations  
are placed in at least two sides.

13. Suction tubing for removing air from a collapsible plastic structure having  
2 known characteristics of flexibility and curvature, the tubing comprising:

a. a length of hollow cylindrical plastic tubing having interior and exterior  
4 surfaces, the interior surface defining a flow path for a fluid;

b. the exterior surface having a selected number of ridges defining valleys  
6 there between, the ridges extending a for a selected length of the tubing; and

wherein the valleys between the ridges contain a plurality of perforations  
8 extending a selected length of the tubing, the plurality of perforations for providing a  
plurality of additional flow paths to the interior of the tubing, the perforations placed  
10 equidistant about the circumference of the tubing.; and

wherein each of the selected ridges has an apex, and wherein the distance between  
12 adjacent ridges is selected such that when suction is applied to the structure, the radius of  
curvature of the plastic is greater than the distance between adjacent ridges.

14. The tubing of claim 13 wherein the distance from the surface of the valleys  
2 to the apex of the ridges is selected such that when suction is applied to the structure the  
radius of curvature of the plastic is greater than the distance from the surface of the valley  
4 to the apex.

15. The suction tubing of claim 13 wherein the tubing is comprised of first and  
2 second extrusions of plastic, the first extrusion having a cross-section shape in the form  
of a U with first and second horizontal parallel arms and a flat bottom surface, the second  
4 extrusion having a cross-section shape of an inverted U, with two horizontal parallel  
gripping arms and a curved upper surface, and wherein when the first extrusion is spirally  
6 wound, the second parallel arm of one spiral abuts the adjacent first parallel arm of the  
next spiral, so that when the second extrusion is complementarily mated with the spirally  
8 wound first extrusion, the gripping arms of the second extrusion bind the adjacent  
abutting arms of the first extrusion so as to form a cylinder and the curved upper surface  
10 of the second extrusion forms the apex of the ridge.

16. The suction tubing of claim 15 wherein the first extrusion is selectedly  
2 perforated prior to the mating of the second extrusion to the spirally wound first  
extrusion.

17. The suction tubing of claim 13 wherein whereby the suction tubing is  
2 formed by a blow molding process, wherein a molten tube of thermoplastic material is  
blown up using compressed air to cause said material to conform to the interior of a  
4 chilled blow mold, the chilled blow mold formed to conform to the shape of the suction  
tubing, the blow mold having pins to produce perforations in the tubing, and wherein  
6 when the tubing is produced by the process, the tubing has said ridges, valleys, and  
perforations.

18. The suction tubing of claim 17 wherein the distance from the surface of the valleys to the apex of the ridges is selected such that when suction is applied to the structure, the radius of curvature of the plastic is greater than the distance from the surface of the valley to the apex.

19. A method of removing air from a collapsible structure, the method comprising the steps of:

a. inserting a hollow plastic tube into the collapsible structure, the tube having interior and exterior surfaces, the interior surface defining a flow path for a fluid; wherein the exterior surface of the tube has a selected number of ridges defining valleys there between, the ridges extending a for a selected length of the tubing, the valleys between the ridges contain a plurality of perforations extending a selected length of the tubing, the plurality of perforations for providing a plurality of additional flow paths to the interior of the tubing; and

b. imparting suction action to the tube.

20. The method of claim 19 wherein the collapsible structure is plastic, having known characteristics of flexibility and curvature, wherein each of the selected ridges has an apex and wherein the distance between adjacent ridges is selected such that when suction is applied to the structure the radius of curvature of the plastic is greater than the distance between adjacent ridges.

21. The method of claim 19 wherein the collapsible structure is plastic, having a known characteristics of flexibility and curvature, wherein the each of the selected ridges has an apex, and wherein the distance from the surface of the valleys to the apex of the ridges is selected such that when suction is applied to the structure the radius of curvature of the plastic is greater than the distance from the surface of the valley to the apex.

22. The method of claim 19 wherein the tube is cylindrical and the perforations  
2 are placed equidistant about the circumference of the tubing.

23. The method of claim 19 wherein the tube has a rectangular cross-section,  
2 the tube having two pair of opposing parallel sides, and the perforations are placed in at  
least two opposing sides.

24. The method of claim 13 wherein the means for imparting the suction action  
2 to the tube is a blower.